Rare species of North American Diatomaceae

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(WITH PLATE 2)

Auliscus floridanus sp. nov.

Valves subtriangular. Central space not evident. Surface of the valve plane, indistinctly pruinose for two thirds of the radius and abruptly costate near the border, with sharply defined, coarse costae at irregular intervals, parallel between the processes but converging near them. Processes three, close to the border, irregular or triangular, with hyaline margins. Diameter 70 μ. [FIG. 3.]

TYPE LOCALITY: Mosquito Inlet, Florida.

DISTRIBUTION: marine; known from the type locality only.

Auliscus hyalinus sp. nov.

Valve subcircular, plane, slightly irregular. Central space appearing hyaline, about one third the diameter of the valve, indistinctly granular or pruinose toward the border where finely punctate, subtle, radiating striae are interspersed at irregular intervals with delicate, costate lines. Processes three, with hyaline borders, placed at irregular intervals at a distance from the border greater than their diameter, indistinctly granular. Diameter 86 μ. [FIG. 4.]

TYPE LOCALITY: Savin Rock, Connecticut.

DISTRIBUTION: marine; known from the type locality only.

The granulation of the surface is somewhat similar to that of *A. pulvinatus* Grun. or *A. Le Tourneurii* Brun, except at the border.

Dimerogramma intermedium sp. nov.

Valves rhombic-lanceolate. Pseudoraphe indistinct. Striae ten in 10 μ, moniliform. Apices indistinctly punctate. Length of valve 35 μ. [FIG. 11.]

TYPE LOCALITY: Campeche Bay, Mexico.

DISTRIBUTION: marine; known from the type locality only.

Apparently intermediate between *D. fulvum* (Greg.) Ralfs and *D. minus* (Greg.) Ralfs.

Glyphodesmis tumida sp. nov.

Valves linear, tumid in the middle, with subcuneate ends. Central and terminal nodules distinct. Pseudoraphe distinct, widened in the middle. Striæ slightly radiating at the ends, moniliform, nine in 10 μ. Length of valve 95 μ. [FIG. 2.]

TYPE LOCALITY: Campeche Bay, Mexico.

DISTRIBUTION: marine; known from the type locailty only.

Resembles *Dimerogramma marinum* (Greg.) Ralfs in outline but differs in possessing a central nodule and finer striation. It differs from *Glyphodesmis Williamsonii* (Greg.) Grun. in outline and somewhat resembles *Plagiogramma Loczyi* Pant., considered by Brun a form of *G. Williamsonii.*

Glyphodesmis campechiana sp. nov.

Valves linear-lanceolate, tumid in the middle and tapering to the subacute ends. Central pseudonodule distinct; terminal spaces ovate. Striae marginal, twelve in 10 μ, leaving a broad, lanceolate, hyaline area about half the width of the valve. Length of valve 30 μ. [FIG. 10.]

TYPE LOCALITY: Campeche Bay, Mexico.

DISTRIBUTION: marine; known from the type locality only.

Synedra anguinea sp. nov.

Frustule in zone view sigmoid at the ends. Valves linear, sigmoid at the slightly tapering, rounded ends, pseudoraphe very narrow, somewhat indefinite. Striae nine or ten in 10 μ, radiate at the ends, punctate, interrupted by a marginal line on each side. Length of valve 315 μ. [Fig. 1.]

TYPE LOCALITY: Colon, Panama.

DISTRIBUTION: marine; known from the type locality only. Rare.

Synedra incisa sp. nov.

Valves linear-lanceolate, with subcapitate ends. One or both sides more or less deeply incised. Pseudoraphe scarcely evident. Striae about eighteen in 10 μ. Length of valve 25–50 μ. [FIG. 8.]

TYPE LOCALITY: Central City, Nebraska (in a water tank).

DISTRIBUTION: fresh water; known from the type locality only, where it is abundant.

Closely resembles *Synedra affinis Baileyana* H. H. Chase (in Walker & Chase, Some New and Rare Diatoms 4. *pl. 2, f. 1*)

in outline, but the striae are not marginal. The species was sent to me by Professor C. J. Elmore, Westminster College, Missouri.

Eunotia Stevensonii sp. nov.

Valves with arcuate dorsal margin and straight or slightly concave ventral margin tumid in the middle. Apices broad and rounded. Striae ten or eleven in 10 μ, punctate. A sutural line or pseudoraphe extends between the terminal nodules as in *E. americana* Kain & Schultze, *E. Clevei* Grun. and others. Length of valve 88–113 μ. [FIGS. 12, 13.]

TYPE LOCALITY: pond near Lake Sunapee, New Hampshire.

DISTRIBUTION: fresh water (fossil), in the Monmouth, Maine, peat deposit.

I take pleasure in naming this species after Mr. William C. Stevenson, Jr., mycologist, of Philadelphia, to whom I am indebted for numerous specimens.

NAVICULA ATTWOODII M. Perag. in Tempère, Diatomées du monde entier 100. 1915.

Valves linear-elliptical, with broad, rounded ends. Median line linear, narrow. Median pores somewhat incrassate. Terminal fissures indistinct. Striae finely lineate, ten to twelve in 10 μ, radiate in the middle, slightly convergent at the ends, interrupted in the middle by a broad expanding fascia reaching the margin. Length of valve 40–50 μ. [FIG. 9.]

TYPE LOCALITY: Quinnipiac, Connecticut.

DISTRIBUTION: marine; Baldwin's Creek, Long Island, and vicinity.

I had considered this form as new but Mr. Robert Hagelstein, who has collected numerous specimens, identifies it as Peragallo's species which, I believe, has not been figured.

Pinnularia Hagelsteinii sp. nov.

Valves rhombic-lanceolate, with produced, rounded ends. Striae marginal, absent from the middle of the valve, radiate in the middle, convergent at the ends, about twelve in 10 μ. Length of valve 60 μ. [FIG. 7.]

TYPE LOCALITY: near Bliss, Idaho.

DISTRIBUTION: fresh water (fossil), known from the type locality only; rather rare.

This form, of which several specimens have been found, occurs in material sent me by Mr. Robert Hagelstein, of Mineola, Long Island, after whom I take pleasure in naming it.

Nitzschia semicostata sp. nov.

Valves constricted in the middle, cuneate and acute at the ends. Longitudinal fold well defined. Keel puncta seven in 10 μ, extended into coarse costae to half the width of the valve, to 10 μ in length. Striae fourteen in 10 μ, punctate. Length of valve 115 μ. [FIG. 6.]

TYPE LOCALITY: Campeche Bay, Mexico.

DISTRIBUTION: marine; known from the type locality only; rare.

Near *N. subcostata* Grun., from which it differs chiefly in the length of the costae.

Surirella Palmeri sp. nov.

Frustule subcuneate, rounded at the ends. Valves ovate-oblong. Median line well defined. Costae three in 10 μ, reaching the median line, indistinct. Near the broad end of the valve a thin, triangular, fin-like blade, about 10 μ in length, ending in a sharp point, extends somewhat obliquely from the median line. Length of valve 108 μ. [FIGS. 14, 15.]

TYPE LOCALITY: Wawaset, Pennsylvania.

DISTRIBUTION: fresh water, known from the type locality only, where it is not rare.

I take pleasure in naming this form after Mr. T. Chalkley Palmer, of Media, Pennsylvania, who discovered it.

Kitton* has described and figured *Surirella Capronii* as resembling *S. splendida* (Ehrenb.) Kütz. in outline and costae but differing in possessing at one or both ends a "nipple-like process," hollow at the base, "with a short spine on the apex." In the present species the valve resembles *S. tenera* Greg. in outline and costae, while the process is quite different from that of *S. Capronii* Kitton.

In certain species of *Surirella* valves occur with a plasma pore, not, however, on the median line. The pore appears to serve as a medium of attachment to surrounding objects and would prevent the usual slow movement of the frustule. Whether the function

* Science Gossip 5: 61. 1869.

of the fin-like blade, acting as an anchor, serves a similar purpose, is a question.

ABNORMAL FORM OF AULACODISCUS OREGONUS Harv. & Bail.

In an article entitled, "*Aulacodiscus oregonus* with two centres," Dr. Christopher Johnston* describes and illustrates a form which he considers "as an evidence of the action of an excessive developmental potency." In normal forms of *A. oregonus* the processes, although variable in number, are symmetrically arranged near the border. In a specimen discovered by Mr. William C. Stevenson, Jr., of Philadelphia, in recent material from Monterey Bay, California, the valve is divided, somewhat asymmetrically, into six parts, each of which contains a hyaline centre and processes with more or less evident furrows. The form may be abnormal but Mr. H. C. Wheeler, of Montreal, has sent me two specimens mounted from material from Port Townsend, Washington, one of which somewhat resembles Mr. Stevenson's form, which is illustrated in FIG. 5, while the other is symmetrically divided into two parts separated by a hyaline space, with processes disposed regularly on each side exactly as in Johnston's form. Whether these specimens are evidences of the formation of gonidia may be a question, but they appear to be too numerous to be considered as mere abnormalities. It is to be noted that numerous valves occur in rich gatherings much smaller than the normal valve and of uniform size, equal to that of the partially formed valves in the specimen figured. In each of the specimens examined the internal finely granular plate described by Mr. R. C. Greenleaf† is distinctly shown, but its function in the formation of new valves is problematical.

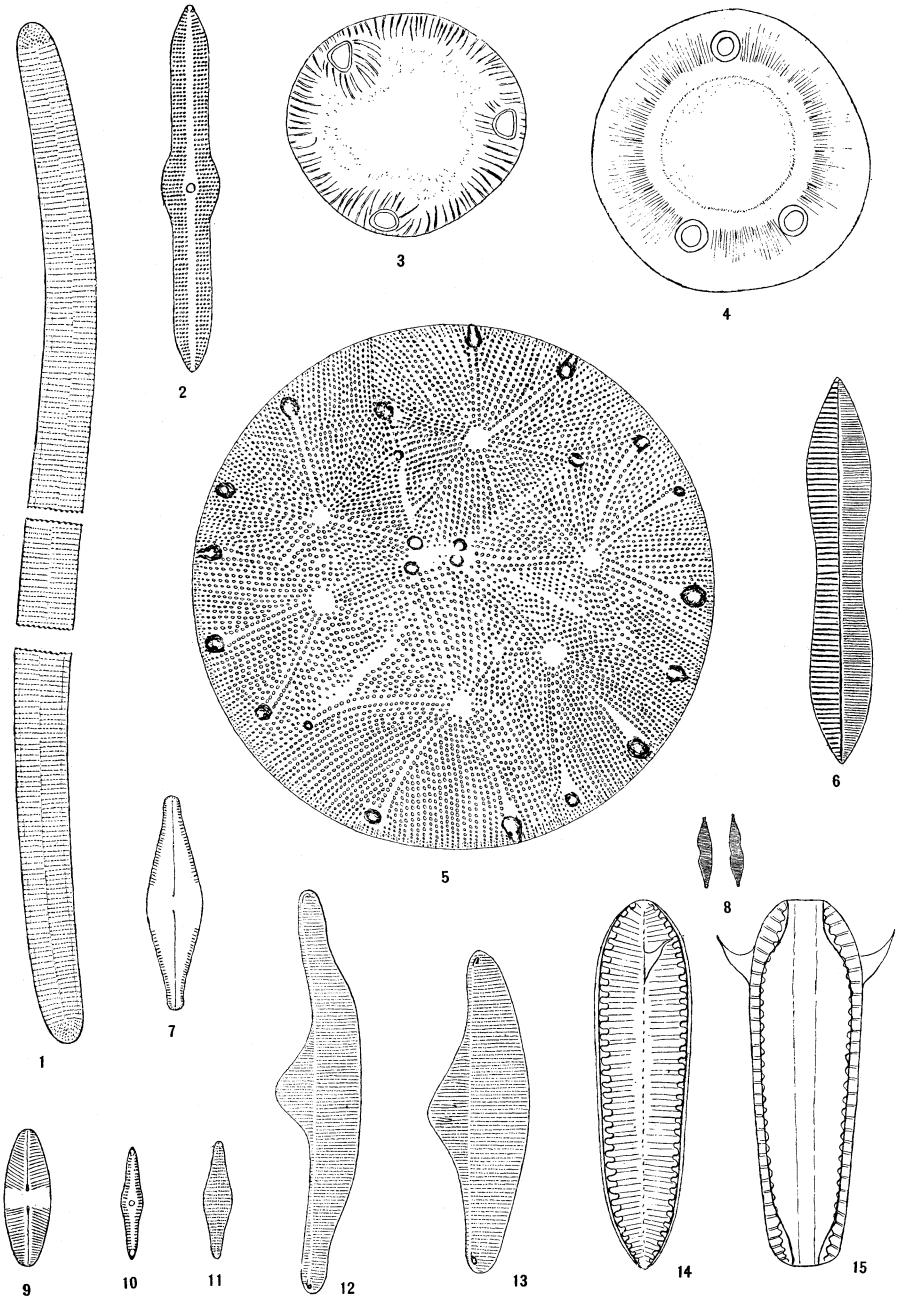
* Am. Jour. Micros. 1: 82. 1876.

† Mo. Micros. Jour. 2: 326. 1869.

Explanation of plate 2

The figures are all magnified 600 diameters.

FIG. 1. *Synedra anguinea* Boyer.
FIG. 2. *Glyphodesmis tumida* Boyer.
FIG. 3. *Auliscus floridanus* Boyer.
FIG. 4. *Auliscus hyalinus* Boyer.
FIG. 5. *Aulacodiscus oregonus* Harv. & Bail., abnormal form.
FIG. 6. *Nitzschia semicostata* Boyer.
FIG. 7. *Pinnularia Hagelsteinii* Boyer.
FIG. 8. *Synedra incisa* Boyer.
FIG. 9. *Navicula Attwoodii* M. Perag.
FIG. 10. *Glyphodesmis campechiana* Boyer.
FIG. 11. *Dimerogramma intermedium* Boyer.
FIGS. 12, 13. *Eunotia Stevensonii* Boyer.
FIGS. 14, 15. *Surirella Palmeri* Boyer.



BOYER: NORTH AMERICAN DIATOMACEAE